Grassland Agriculture-Serving Mankind

Robert F. Barnes

Grassland agriculture may be described as the art and science of cultivating forage crops, pasture, and rangelands for food and fiber production. Grassland systems are dependent upon grasses, legumes, and some woody sources of forage; as well as upon managers for proper land use and increased animal profitability.

It is important to understand the terminology associated with grasslands. Efforts have been made in the past to document such terminology. I commend such efforts, for I feel that there is a continuing need for clarifying terms and their use. Although there may be some discrepancies, I urge that we orient our thinking toward the following definitions:

Grasslands—Moore (1970) used the term to denote all plant communities on which animals are fed, annually sown crops excepted.

Forages—Henzel (1981) uses the term broadly to comprise all plant materials eaten by herbivores, including those that are grazed (pastures) and those that are cut before being fed (hay and fodder). Crop residues such as straw and the foliage of trees and shrubs fall within this broad definition.

Forage crops—This two-word term has a much narrower meaning and refers to any crop of vegetative plants, or plant parts, harvested before being fed to animals. Thus, forage crops include hay, dehy, haylage, silage, greenchop, or soilage, fodder and certain byproducts including crop residues.

Pasture—Primarily refers to plant communities predominantly of introduced species, whether sown or volunteer, on which animals are grazed (Moore, 1970). A more restrictive definition is "... fenced area of domesticated forages, usually improved, on which animals are grazed."

Rangeland, is a term of American origin. It means land on which the native vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing use, and not dominated by trees.

Range is a word difficult to define precisely since it has evolved into a collective word with broad definitions, such as "The region throughout which a plant or animal naturally lives." Range, in this context, encompasses all rangelands and forest range, that is, those forest lands that support an understory of herbaceous or shrubby vegetation that provides native forage for grazing and browsing animals. Thus, grassland agriculture, in the broad sense, constitutes the largest land-use practice in the world, covering more than half the total land surface of the earth. Grasslands also remain as one of the largest undeveloped resources for increased agricultural productivity in the world today.

The basic natural resources associated with the production of forages include land, climate, water and energy. Sound husbandry of these natural resources will be required if increased grassland productivity is to be attained, while maintaining a quality environment. As Dr. Gerald Thomas will emphasize in his plenary paper, the increasing population, changing attitudes of people, and increased levels of affluence are having a decided influence upon the development and use of the earth's resources.

During this Congress, many speakers will identify a multitude of problems concerning the development, production, and use of the grassland resources of the world. Among the major constraints facing the world today are the following:

- 1. shortage of fossil fuel energy,
- 2. scarcity of water and deteriorating water quality,
- 3. soil losses,
- 4. insufficient knowledge and technology reserve,
- 5. failure to apply existing technology, and
- 6. increasing competitive uses for resources.

I suggest that we look upon these constraints not as problems, but rather as opportunities. I trust that each of you will strive to define these opportunities clearly and establish the research, extension, and educational programs needed to effect major improvements in our grassland resources. Increasing pressures for goods and services to meet the needs of society require that these resources be given full attention. Our grasslands must be improved and maintained in an ecologically and economically sound manner in order to meet national and international needs for food, fiber, environmental quality, wildlife and outdoor recreation.

An array of scientific disciplines is required to tap the tremendous potential that exists for increasing agricultural productivity through judicious use of grassland resources. Moreover, a sound national grassland philosophy is required by any nation before an efficient grassland agricultural program can be developed. We all have an opportunity and responsibility, whether we are scientists, technicians, administrators, farmers, ranchers or consumers, to influence our nation's grassland philosophy and, in turn, the establishment of a sound agricultural policy that allows the effective development and use of those grassland resources. The importance of establishing strong local and national grassland organizations, as a means of providing leadership for such efforts, cannot be overemphasized. I have experienced the importance and impact that the American Forage and Grassland Council and the Society for Range Management have had in the U.S. Representatives from many such forage, grassland, and rangeland organizations from throughout the world are present here today. Many of you have experienced

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Editor's Note: Several SRM members attending the Lexington meeting remarked this would be a good talk to publish in *Rangelands* so all members could read it.

the impact of your organizations in your own countries. We salute you and commend your efforts.

I would now like to address briefly an issue which developed at the Final Business Meeting of the XI International Grassland Congress, held in Australia in 1970. It was noted that the arid and semiarid areas of the world's land masses were "... receiving increasing pressure to produce forage for livestock and wildlife, water for downstream needs, and services for man's enjoyment. Research efforts into problems of arid and semiarid lands are rapidly increasing, and a worldwide need exists to communicate the results of this research and a practical management." It was recommended that "... future Grassland Congresses contain contributed papers, discussions, and plenary sessions concerning this important area of the world's grasslands."

Parenthetically, I would like to note that a conscientious effort has been made to develop a program for the XIVth Congress that will encompass the needs of the full continuum of the arid, semiarid, subhumid and humid areas of the world, as well as of the temperate, subtropical, and tropical regions. It remains for you to determine and history to document whether this goal is achieved. In 1978 the first International Rangeland Congress was convened in Denver, Colorado, U.S.A., due, at least in part, to the failure of the International Grassland Congress to encompass the full complexity and diversity of the grassland agricultural systems, particularly arid and semiarid rangelands.

A Committee for the Continuation of the International Rangeland Congress (IRC) has been actively involved in identifying a host for the Second IRC. A report concerning the status of these activities will be made during the business meeting of this XIV Congress.

I am personnaly supportive of the concept of two congresses, provided their programs are complementary and their meetings are held on alternating years. Also, it is highly desirable that a close liaison be maintained between the two Continuing Committees. I will be serving on both committees for the next three to four years and thus hope to be able to aid in that continuity. However, I strongly recommend that the two committees specifically provide for a formal liaison on a continuing basis. I would also like to speak to the question of the founding of an international grassland organization. A resolution was passed by the XII International Grassland Congress, meeting in Moscow, USSR in 1973, recommending that the Continuing Committee study the question of the advisability of founding an international grassland organization and to report the results to the XIII International Grassland Congress. At the XIII Congress in Leipzig, GDR, in 1977, the Resolution was addressed superficially at the final business meeting by concluding that "There were many considerations and aspects which were not in favor of setting up such an organization for the time being. The Continuing Committee, however, recommended that grassland organizations should be established at national levels."

I personally have a dream that I would like to share with you. I envision the establishment of a coordinating body for the Grassland Congress and Rangeland Congress. Perhaps it might best be called the International Grazing Lands Organization, or the International Forage Pasture and Range Organization.

I realize the complexities, difficulties, and obstacles to be overcome in the establishment of such an organization. My wish and my prayer are that there are enough like-minded individuals gathered here today who may cause it to happen. It may not come to pass for another decade—but if it is to succeed, it must be started at the earliest possible date. I look forward to hearing your reaction to such a proposal. For it is only as we work together for good that we can truly serve mankind.

I am confident that the interchange of experience and knowledge of those attending this Congress will result in tremendous benefits to this and future generations.

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